

Novel Human Mast Cell Line

Researchers at the University of South Florida have developed a novel human mast cell line that has many potential uses in the field of immunology.

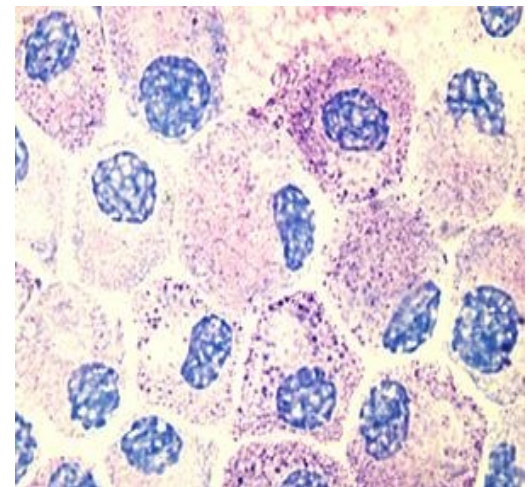
Mast cells initiate allergic inflammation through IgE-mediated release of pre-formed mediators, leukotrienes and cytokines. Study of human mast cell activation is limited by the availability of only a few mast cell lines and their need for exogenous recombinant cytokines. Activation of mast cells by allergens and other stimuli, leads to the release and de novo generation of a variety of airway inflammatory mediators including histamine, cysteinyl leukotrienes, prostaglandins, cytokines and enzymes such as tryptase.

Our inventors have developed a human mast cell line (USF-MC1) that responds to IgE-mediated and IgE-independent stimuli in a way comparable to that of LAD2 without the costly exogenous cytokines that are typically required to maintain comparable cultures. The cell line also possesses a neoplastic phenotype as the cells originated from a patient with mast cell sarcoma. In order to produce this novel cell line, stem cells were isolated from HUCB and the purified cells were cultured in human stem cell factor and interleukins. This new cell line may stand as a convenient new experimental model of human mast cell activation for various studies in the field of immunology.

ADVANTAGES:

- Cytokine expression induced by IgE
- Uniform expression of tryptase
- Does not require stem cell factor
- Flexible model to study immunology

Convenient Experimental Model of Human Mast Cell Activation



Immunohistochemical Staining of Mast Cells

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University of South Florida | Technology Transfer Office
813.974.0994 (office) | 813.974.8490 (fax)
patents@research.usf.edu
<http://www.usf.edu/research-innovation/pl/>